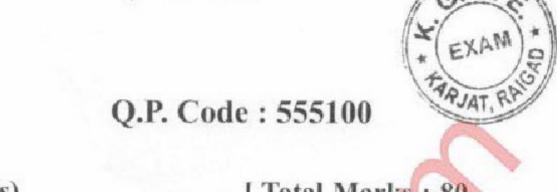
Mechanical/Automobile 16112116



(3 Hours)

[Total Marks : 80

N.B.: (1) Question no. 1 is compulsory.	
(2) Attempt any three questions out of remaining five questions	
(3) Figures to right indicate full marks	
(4) Assume suitable data if necessary	
1. Write short note on any four of the following	20
(a) Transfer molding process.	
(b) friction welding	
(c) CO2 mould casting	
(d) Extrusion	
(e) Mechanism of sintering	
 (a) With a neat sketch explain the principle and working of resistance welding process. Also discuss its advantages, limitations, and applications. 	8
(b) Differentiate Welding, soldering and brazing.	6
(c) Discuss Rotational Molding process with neat sketch.	6
3. (a) Describe the basic steps of powder metallurgy process. Discuss applications, advantages and disadvantages of powder metallurgy.	8
(b) Describe inspection of castings,	6
(c) Write short note on microstructure of welds.	6
4. (a) What is NDT.List various methods of NDT. Explain Ultrasonic method of crack detection.	8
(b) With a neat sketch explain the working principle of plastic injection mounding process.	6
(c) What is meant by forging? Differentiate between closed die forging and open die forging.	6
5. (a) Define weldability. Differentiate between TIG and MIG welding process.	10
(b) Describe in detail various rolling defects.	10

6. (a)	A cylindrical riser must be designed for a sand casting mould. Casting	8
	itself is a rectangular plate made of steel, with dimensions 7.5 cm X	4
	12.5 cm X 2.0 cm. Previous observations have indicated that the total	
	solidification time (TST) for this casting is 1.6 min. the cylinder for	
	riser will have D/H ratio= 1. Determine the dimensions of riser so that	
	its TST=2.0 min.	

(b) Explain vacuum forming process of polymers.

(c) Write short note on application of plastics in industries.